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A KIND OF COMPENSATION

by Neill McKee

PERU, IDRC -- South of Lima, the capital of Peru, is the coastal desert. Huge, shifting sand dunes roll right down to the shore, to be met by the blue-green rollers of the Pacific Ocean. It is a beautiful but desolate landscape, seemingly lifeless.

But looks can be deceiving. As if offering a kind of compensation for the barrenness of the land, the ocean here teems with life. This is one of the richest fishing grounds in the world. And until quite recently the cream of the crop was the anchoveta.

At its peak in 1970, the anchoveta harvest amounted to over 12.5 million tonnes, the largest single-species fishery in the world, providing 45 percent of the world's fishmeal. It accounted for 98 percent of Peru's fish production, and one-third of the country's export earnings. Two thousand fishing boats were engaged in the catch, and a state fishing corporation, PescaPeru, was created to develop the industrial fishing industry.

Today PescaPeru's fleet sits idle much of the year. The anchoveta catch is a fraction of what it once was, and strict quotas are in effect as part of a series of conservation measures.

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The fishing industry is struggling to recover from a double blow that struck in the early 1970s.

The decline of the anchoveta stocks was partly due to over-fishing, to indiscriminate culling of young fish that had not yet had a chance to breed. But this combined with a strange natural phenomenon. The coastal waters of this region are normally cold, allowing an upwelling of nutrient-rich waters, effectively cutting off much of the anchoveta's food supply. By 1973 the catch was reduced to 2.3 million tonnes, less than one-fifth of what it had been only three years earlier. Recovery has been slow, and there is a great deal of hardship, especially among the small-scale fishermen.

The disappearance of the anchoveta has created other problems. Millions of seabirds used to inhabit the region's offshore islands. Their droppings were collected by the coastal villagers, and had supported a local guano fertilizer industry for centuries. It is said that the Incas valued this fertilizer so much that they imposed the death penalty on anyone caught killing a guano bird.

But the staple diet of the birds was anchoveta, and so the bird population, too, has been drastically reduced. The islands, with their herds of sea lions and flocks of pelicans and gulls, are still a photographer's dream. But the guano industry is threatened with extinction.

Anchoveta, however, are not the only fish in this sea, despite their one-time dominance of the industry. There are tuna, for instance, and there is an abundance of shellfish, particularly the molluscs, such as clams, mussels, and scallops. Because of the earlier concentration on anchoveta, the development of other fisheries and aquaculture has been neglected until recently. Now the Department of Fishculture and Oceanography of the National Agricultural University is helping to develop mollusc culture systems that could provide some much-needed extra income for the coastal villagers, as well as year-round employment, and a valuable source of food protein.

The annual shellfish catch now is around 10,000 tonnes. The usual method of collecting them is hazardous, however, and inefficient. Divers in small boats using makeshift equipment go down to depths of as much as 15 metres, for hours at a time, filling net bags with molluscs from the sea bottom. The accident rate in this type of fishing is high, and the average life expectancy just 40 years.

Researchers Victor Venturi and Hugo Nava, with a team of student assistants, encountered one such group while on a survey trip to Bellestas Island, off the coast near Paracas Bay. They say it is getting more and more difficult to persuade young people to go into this precarious way of making a living. Mollusc fishing may be a dying trade. But, say the researchers, if molluscs can be cultured along this coast, on simply designed racks or trays, the dangers would be eliminated, and they believe production would be greatly increased.

While some of the research team take plankton samples and set up submerged collectors to check the numbers of spat (baby molluscs) around the island, three students using modern diving equipment bring up dozens of samples from the bottom: barnacles, snails, starfish, crabs, and many of the brown mussel known locally as choro. This species, says Hugo Nava, has the best potential of all. "If we cannot culture choro here, we cannot culture anything," he says.

The researchers are confident that they can cultivate choro and other molluscs on this coast. With the help of a research grant from Canada's International Development Research Centre, six test sites have been selected at sheltered locations. Here they are studying the breeding cycles of molluscs, and gathering data on tides, temperature, salinity, and competitive life forms.

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All this information, and a great deal more, is needed to determine the best conditions for mollusc culture. Different cultivation methods are being tested, and these will be evaluated in terms of practicality, growth rates, and various economic factors. The researchers must also develop sanitation controls to rid the molluscs of any bacteria, and effective management techniques to stabilize production.

Meanwhile, there are survey trips to test conditions along other parts of the coast. It is hard work. After leaving Bellestas Island, the team must weigh and measure the bottom samples, and some must be cooked while still fresh, and then weighed. It is 4 a.m. before the day's work is finished.

It has been a long day and night for the local mollusc fishermen, too, as they unload net bags of choro from their small boats onto a waiting truck that will take them to Lima. On this day a 70-lb bag of mussels in the shell fetches 40,000 soles -- about eleven US dollars. They will sell for five times that price in the city.

Peruvians have a taste for molluscs, and that may be the key to the potential success of the mollusc culture project. New eating habits do not have to be developed, the market is already there. A cannery near Paracas sits idle much of the time, when it could be processing mussels, scallops and clams for export or for shipment inland.

The anchoveta may return, or they may not. But the sea is fertile, and for the coastal people mollusc culture, developed on a commercial scale, may provide the key to a new way to harvest the sea. A safer way. A kind of compensation.

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